



CASE PP/1-22278/P5/CGC 2069

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IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

IN RE APPLICATION OF

SHENG-SHING LI ET AL

APPLICATION NO: 10/045,391

FILED: November 9, 2001

FOR: WETTABLE POLYOLEFIN FIBERS AND  
FABRICS

Group Art Unit: 1794

Examiner: Peter Y. Choi

Confirmation No. 2361

Commissioner for Patents  
P.O. Box 1450  
Alexandria, VA 22313-1450

**APPEAL BRIEF**

Sir:

This Appeal is from the Final Rejection of claims 1, 2, 7-12, 17-19 and 25 of the Office Action dated August 1, 2007.

The Notice of Appeal was timely mailed by first class mail with a Certificate of Mailing on October 30, 2007 and was filed with the USPTO on November 1, 2007, making this Brief originally due on January 1, 2008. A petition for a 1 month extension of time is attached herewith, thus making this Brief due on February 1, 2008. This Brief is timely filed.

The Commissioner is hereby authorized to charge any necessary fee or credit any overpayment to Deposit Account No. 03-1935.

**(1) Real Party of Interest**

The real party of interest, by virtue of an assignment recorded in the U.S. Patent and Trademark Office on May 7, 2002, reel/frame 012881/0490, is:

Ciba Specialty Chemicals Corp.  
P.O. Box 2005  
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**(2) Related Appeals and Interferences**

To the knowledge of the undersigned, there are no related appeals or interferences.

**(3) Status of the Claims**

Claims 1, 2, 7-12, 17-19 and 25 are pending and are under consideration.

Claims 1, 2, 7-12, 17-19 and 25 are rejected and are presented for appeal.

Claim 1 is independent.

Claims 1, 2, 7-12, 17-19 and 25 are present in an attached appendix with status indentifiers.

**(4) Status of the Amendments**

The Amendment filed September 29, 2005 brings up to date the status of the claims. Said Amendment was entered upon filing a Request for Continued Examination on November 23, 2005. In the Amendment, only independent claim 1 was amended.

## **(5) Summary of the Claimed Subject Matter**

**Claim 1** is aimed at wettable polyolefin fibers or filaments comprising a melt blend which comprises (a) a polyolefin and (b) at least one compound of formula (Ia),  $R_1(OCH_2CH_2)_xOH$  (Ia), where x is 2 or 3 and  $R_1$  is a straight or branched chain alkyl of 28, 30 or 32 carbon atoms. Support exists in the specification, last paragraph of page 5 through page 6. Support is also found in working Example 1 on pages 26-29.

The wettable polyolefin fibers are useful in fabrics for sanitary articles such as baby diapers, last full paragraph of page 5.

The presently claimed narrow representation of the compound of formula (Ia) is available commercially as UNITHOX 420, second paragraph, page 7. The UNITHOX data sheet is of record.

The compounds of formula (Ia) are termed "ethoxylated alcohols", "ethoxylated aliphatic alcohols", "alkyl ethoxylates", "alkoxylated alcohols" or "alkoxylated alkyl alcohols".

The claims require that the alkoxylated alkyl alcohols are melt blended with the polyolefin. Specification, page 8, third full paragraph.

Claim 1 is the only independent claim.

**Claim 2** is aimed at where the polyolefin is polypropylene or polyethylene. Support is found in the first full paragraph of page 12 and original claim 2.

**Claim 7** requires that the compounds of component (b) be present from about 0.1% to about 15% by weight, based on the weight of polyolefin. Support is in the second paragraph of page 9.

**Claim 8** requires that the compounds of component (b) be present from about 1% to about 7% by weight, based on the weight of the polyolefin. Support is also in the second paragraph of page 9.

**Claim 9** is aimed at a bi-component fiber comprising a polyolefin component which comprises a melt blend of claim 1. Support is in the last full paragraph of page 7 of the specification.

**Claim 10** is aimed at a woven or nonwoven fabric comprising the polyolefin fibers or filaments of claim 1. Support is found in the last full paragraph of page 10.

**Claim 11** is dependent on claim 10 and requires that the polyolefin be polypropylene or polyethylene. Support is found in the first full paragraph of page 12 and original claim 11.

**Claim 12** is aimed at woven or nonwoven fabrics comprising bi-component fibers of claim 9. Support is found on page 7, last full paragraph and page 10, last full paragraph.

**Claim 17** is focused on an article of manufacture comprising a woven or nonwoven fabric of claim 10 and is selected from the group consisting of disposable diapers, training pants, etc. Support is found on page 10, second paragraph and original claim 17.

**Claim 18** is dependent on claim 1 and requires that the melt blend additionally comprises an ethoxylated aliphatic alcohol that is not of formula (Ia). Support is found in the first full paragraph of page 7.

**Claim 19** is aimed at a fiber or filament of claim 1 where the melt blend further comprises a 2 mole ethoxylated alcohol. Support is found in the first paragraph of page 7.

**Claim 25** is focused on a fiber or filament of claim 1 that further comprises a stabilizer selected from the group consisting of hindered amine light stabilizers, phenolic antioxidants, phosphites or phosphonites, hydroxylamines, benzofuranones and hydroxyphenylbenzotriazole, hydroxybenzophenone or tris-aryl-s-triazine UV absorbers. Support is found in the specification, second to last paragraph of page 12 through page 25.

#### **(6) Grounds of Rejection to be Reviewed on Appeal**

The grounds for rejection for review are:

1) Claims 1, 2, 7-12, 17-19 and 25 are rejected under 35 USC 103(a) as being unpatentable over Patel, et al., U.S. Pat. No. 5,348,736 in view of Mor, et al., U.S. Pat. No. 6,146,757.

In the Final Action the Examiner states that:

Claims 1, 2, 10, 11 and 17-19 are rejected as substantially set forth in the Non-Final Action of July 24, 2006, section 5.

Claims 7-9, 12 and 25 are rejected as substantially set forth in the Non-Final Action of January 10, 2007, sections 2 and 3.

## **(7) Argument**

All claims 1, 2, 7-12, 17-19 and 25 are argued together as one group.

In addition to the Patel and Mor references, also discussed as relevant art by the Examiner is the UNILIN data sheet ("UNILIN Alcohols", 1985). Appellants herein further discuss the UNITHOX data sheet (UNITHOX Ethoxylated Alcohols, 1996). Both data sheets are of record.

Mor teaches wettable fibers or filaments comprising a thermoplastic polymer having incorporated therein a first wetting agent and a second wetting agent. The polymer is preferably an olefin polymer. The first wetting agent is at least one nonionic alkoxyated alkylphenol. The second wetting agent is at least one compound selected from the group consisting of an alkoxyated fatty alcohol and a polyoxyalkylene modified organosilicone polymer, col. 5, lines 53-64.

The second wetting agent of Mor, the alkoxyated fatty alcohol, has an alkyl group of from 8 to 22 carbon atoms and on average about 1 to about 100 moles of ethylene oxide. The number of moles of ethylene oxide are preferably from about 2 to about 10 moles and most preferably from about 3 to about 6 moles, col. 6, lines 32-39.

Patel is aimed at liquid fiber treating and skin treating compositions, for example shampoos, hair conditioners, hair setting compositions, anti-dandruff compositions, fabric softening compositions, antistatic compositions, detergents, skin cleansers, skin lotions and sunscreens (Abstract). Fiber and fabric softeners are mentioned in col. 4, lines 57-58. Fabric detergents are mentioned in col. 13, lines 45-55.

Patel fails to teach that the fiber or filament comprises a polyolefin. Patel fails to teach that the "treating compositions" are incorporated into a fiber by melt blending. See page 4, line 4 of the Final Action and the paragraph bridging pages 3 and 4 of the Final Action.

Patel is aimed at home and personal care formulations that are applied to fabrics, hair or skin. Mor is aimed at wettable polyolefin fibers to be used in for example disposable articles such as diapers. The fibers of Mor are "melt blended" or "extrusion compounded", thus incorporating the additives, Example 1, col. 16. The present invention is in the same field as Mor. Patel is aimed at a totally different field.

**Appellants submit therefore that Mor and Patel are aimed at disparate arts and are not properly combined.**

The limitations of Mor do not meet the present claims. The present claims require that the alkyl group of formula (Ia) contain 28, 30 or 32 carbon atoms. The corresponding alkyl group of Mor has from 8 to 22 carbon atoms (col. 6, line 32).

Patel teaches the use of UNILIN alcohols of from 18 to 54 carbon atoms, col. 3, line 40. Patel also teaches the use of the corresponding alkoxyated alcohols. The alkoxyated alcohols contain up to about 20 ethoxy groups, for example from about 10 to 20 ethoxy groups, col. 3, lines 55-57. Preferred UNILIN's are UNILIN 425 and 550 as well as UNILIN 325 and 350, col. 3, line 64 through col. 4, line 1.

Patel also teaches specifically that UNITHOX 550, an ethoxylated UNILIN 550, may be employed, col. 4, lines 17-20.

The UNILIN data sheet displays UNILIN 425 and UNILIN 425 ethoxylates. Disclosed are ethoxylates with 1, 2, 4, 6, 10, 14 and 16 ethoxy groups. Specifically disclosed is the 50% ethoxylate which has 10 ethoxy groups.

The Examiner alleges that as the number of ethoxy groups of the derivative of UNILIN 425 may contain 2 monomers of ethoxy groups, that this derivative anticipates the claimed invention, page 6, lines 2-5 of the Action.

The compounds of present formula (Ia) are in fact UNITHOX 420, the 2 mole ethoxylate of UNILIN 425, see the UNITHOX data sheet and the UNILIN data sheet.

However, to arrive at UNITHOX 420 from the combined disclosures of Mor and Patel (and the UNILIN data sheet) is hindsight analysis. From this combination, which particular UNITHOX would the skilled artisan be directed to employ? Patel teaches derivatives of UNILIN 425, 550, 325 and 350. The number of ethoxy groups of Patel is broad and may be up to 20 or from 10 to 20. The UNILIN data sheet discloses from 1 to 16 ethoxy groups. Mor teaches alkoxylated alcohols with from 1 to 100 or from 3 to 6 ethoxy groups.

Appellants respectfully submit that one could not arrive at UNITHOX 420 from this combination of art. The disclosures are too generic. There is no suggestion to arrive at UNITHOX 420 from this combination. The Examiner relies on the multiple recitation of UNILIN 425 in Patel and the disclosure of the UNILIN data sheet showing 1, 2 or 4 (also 6, 10, 14 and 16) monomers of ethylene oxide.

**Those skilled in the art could not have arrived at the present invention from the combined disclosure of Mor and Patel (and the UNILIN data sheet).**

Patel does specifically mention UNITHOX 550, col. 4, lines 17-18. Appellants submit that even though Mor and Patel are not properly combined, that to show unexpected results over this combination, the comparison of UNITHOX 550 to present UNITHOX 420 is the only fair comparison. These test results are in the second Gande Declaration filed May 7, 2007. In this Declaration, the two ethoxylated alcohols are tested for hydrophilicity in polypropylene nonwoven webs. Hydrophilicity is measured by observing the Liquid Absorption Capacity (LAC) of the fabrics. The web with 3% UNITHOX 550 displayed a LAC of 30%. The inventive web containing 3% of UNITHOX 420 displayed a LAC of 74%.

The present results are unexpected based on the combined disclosures of Mor and Patel.

The Examiner alleges on page 7 of the Action that Appellants have not claimed water absorption or wettability, or a measurement associated with water absorption or wettability, or a structure or composition to which water absorption or wettability may be attributed. Therefore the

water absorption and wettability characteristics appear to be outside the scope of the claimed invention.

Appellants submit that present claim 1 is fully patentable. Outstanding wettability is attributed to the composition of claim 1. The composition is not obvious. The results of the second Gande Declaration support this by showing unexpected results. The present invention is aimed at melt blended wettable polyolefin fibers useful for example in diapers and other disposable articles, second paragraph of page 1 of the disclosure.

**The select compounds of the present invention provide for unexpected wettability results.**

Further, Appellants again point out the results of the first Gande Declaration filed October 26, 2006. The LAC of present UNITHOX 420 is compared to UNITHOX 480 and UNITHOX 750 in polypropylene nonwoven fabrics. The fabric with 3% UNITHOX 420 has a LAC of 450 compared to 280 and 150 for UNITHOX 480 and 750, respectively.

Thus, in total, results are obtained for UNITHOX 420 compared to three other ethoxylated alcohols not of the present claims. UNITHOX 420 is superior in providing polypropylene with liquid absorption characteristics.

These results are unexpected and could not have been predicted from any combination of Mor, Patel and the UNILIN and UNITHOX data sheets.

## **Conclusion**

To summarize:

1) Appellants submit that the disclosures of Mor and Patel are aimed at disparate arts and are not properly combined.

2) Appellants submit that those skilled in the art could not have arrived at the present invention from the combined disclosures of Mor and Patel.



3) The select compounds of the present invention display unexpected wettability results in a polyolefin fabric.

In view of these remarks and the first and second Gande Declarations, Appellants submit that the present 35 USC 103(a) rejections are addressed and are successfully rebutted.

Appellants submit that the rejections are in error and respectfully request that they be reversed.

Respectfully submitted,



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Attachments: Claims Appendix  
Evidence Appendix  
Related Proceedings Appendix  
Transmittal Letter  
Petition for a 1 Month Extension of Time

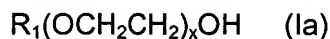
## **(8) Claims Appendix**

**1. (previously presented)** A wettable polyolefin fiber or filament, comprising a melt blend

which comprises

(a) a polyolefin; and

(b) at least one compound of the formula (Ia)



where x is 2 or 3 and

$R_1$  is a straight or branched chain alkyl of 28, 30 or 32 carbon atoms.

**2. (original)** A fiber or filament according to claim 1 in which the polyolefin is polypropylene or polyethylene.

**3-6. (canceled)**

**7. (original)** A fiber or filament according to claim 1 wherein the compounds of component (b), in total, are present from about 0.1 % to about 15 % by weight, based on the weight of the polyolefin of component (a).

**8. (original)** A fiber or filament according to claim 7 wherein the compounds of component (b), in total, are present from about 1 % to about 7 % by weight, based on the weight of the polyolefin of component (a).

**9. (original)** A bi-component fiber comprising a polyolefin component, wherein the polyolefin component comprises a melt blend comprising components (a) and (b) according to claim 1.

**10. (previously presented)** A woven or nonwoven fabric comprising polyolefin fibers or filaments according to claim 1.

**11. (original)** A woven or nonwoven fabric according to claim 10 wherein the polyolefin is polypropylene or polyethylene.

**12. (previously presented)** A woven or nonwoven fabric comprising bi-component fibers according to claim 9.

**13-16. (canceled)**

**17. (original)** An article of manufacture comprising a woven or nonwoven fabric according to claim 10 selected from the group consisting of disposable diapers, training pants, feminine napkins, tampons, incontinence care products, wet and dry wipes, wound dressings, surgical capes, filter media and battery separators.

**18. (previously presented)** A fiber or filament according to claim 1 in which the melt blend additionally comprises an ethoxylated aliphatic alcohol that is not of formula (Ia).

**19. (original)** A fiber or filament according to claim 1 in which the melt blend additionally comprises a 2 mole ethoxylated stearyl alcohol.

**20-24. (canceled)**

**25. (previously presented)** A fiber or filament according to claim 1 further comprising a stabilizer selected from the group consisting of hindered amine light stabilizers, phenolic antioxidants, phosphites or phosphonites, hydroxylamines, benzofuranones and hydroxyphenylbenzotriazole, hydroxybenzophenone or tris-aryl-s-triazine UV absorbers.

**(9) Evidence Appendix**

Evidence submitted during prosecution is:

- 1) Rule 132 Declaration by Dr. Matthew Gande filed May 7, 2007
- 2) Rule 132 Declaration by Dr. Matthew Gande filed October 26, 2006

**(10) Related Proceedings Appendix**

To the knowledge of the undersigned, there are no related appeals or interferences, and thus, no related court or Board decisions.